

Appl. No.: 09/005,318
Amdt. Dated May 25, 2007
Reply to Office Action of November 28, 2006

Amendments to the Claims:

1-41. (Cancelled)

42. (Previously Presented) A composition for delivery of a biological agent to a basolateral factor of an epithelial surface, said composition comprising a targeting molecule covalently linked via a peptide bond to at least one biological agent, wherein said targeting molecule comprises a polypeptide that: (a) forms a closed covalent loop; and (b) contains at least three peptide domains having beta-sheet character, each of the domains being separated by domains lacking beta-sheet character, wherein said targeting molecule comprises a J chain portion encoded by nucleotides 1-213 of SEQ ID NO:8 and wherein said biological agent is not native to the targeting molecule and is not iodine.

43-51. (Cancelled)

52. (Previously Presented) The composition of claim 42 wherein said targeting molecule contains at least four peptide domains having β-sheet character, separated by domains lacking β-sheet character.

53. (Cancelled)

54. (Previously Presented) The composition of claim 42 wherein said targeting molecule further comprises a linear N-terminal domain.

55. (Previously Presented) The composition of claim 54 wherein said N-terminal domain comprises an amino acid sequence selected from the group consisting of SEQ ID NOS:125, 126, 127, 128, 129, and Asn Lys.

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56. (Previously Presented) The composition of claim 42 wherein said targeting molecule comprises the C-terminal domain of a J chain.

57. (Previously Presented) The composition of claim 56 wherein said C-terminal domain comprises a linear peptide having β-sheet character.

58. (Previously Presented) The composition of claim 57 wherein said linear peptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOS:130, 131, 132, 133, and 134.

59. (Previously Presented) The composition of claim 56 wherein said C-terminal domain comprises a covalently closed loop.

60. (Previously Presented) The composition of claim 59 wherein said covalently closed loop comprises an amino acid sequence selected from the group consisting of SEQ ID NOS:135, 136, 137, 138, 139 and 140.

61. (Cancelled)

62. (Previously Presented) The composition of claim 42, wherein said biological agent is selected from the group consisting of enzymes, antibodies, single chain antigen binding proteins, antigen combining sites, nucleic acids, carbohydrates and lipids.

63. (Previously Presented) A pharmaceutical composition for delivery of a biological agent to a basolateral factor of an epithelial surface, comprising the composition of claim 42 and a pharmaceutically acceptable carrier.

64-66. (Cancelled)

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67. (Previously Presented) The composition of claim 42, wherein said targeting molecule comprises an immunoglobulin heavy chain or portion thereof linked to said J-chain portion.

68. (Previously Presented) The composition of claim 42, wherein said targeting molecule does not comprise an immunoglobulin light chain.

69. (Previously Presented) The composition of claim 68, wherein said targeting molecule comprises an immunoglobulin heavy chain or portion thereof linked to said J-chain portion.

70-72. (Cancelled)

73. (Previously Presented) The composition of claim 42, wherein said targeting molecule does not contain at least one of the domains selected from C_H1α, C_H2α, C_H3α and C_L.

74-75. (Cancelled)

76. (Previously Presented) The composition of claim 73, wherein said targeting molecule contains at least four peptide domains having β-sheet character, separated by domains lacking β-sheet character.

77-80. (Cancelled)

81. (Previously Presented) The composition of claim 42, wherein said targeting molecule comprises the CH2 and CH3 domains of IgA or IgM but does not comprise a full-length immunoglobulin.